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MARSHALL STAR

Serving the Marshall Space Flight Center Community April 20, 2006

Marshall, industry, Air Force achieve critical milestone

Team completes hot-fire engine test for liquid oxygen-liquid methane engine development

By Sherrie Super

The Marshall Center, industry and the U.S. Air Force have achieved a major milestone in the development of next-generation spaceflight technologies. They have successfully completed a 103-second hot-fire test of an engine fueled by liquid oxygen and liquid methane.

The "LOX-methane" test — believed to be the longest in duration for such an engine developed and hot-fire tested in the United States — fuels the promise of using such technology to support the Vision for Space Exploration. The vision plans for a return to the moon, human exploration of Mars and journeys throughout the solar system in

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Terry Leibold/MSFC

At the Marshall Center, NASA, industry and the U.S. Air Force test an engine fueled by liquid oxygen and liquid methane.

Marshall manufacturing wins NASA Continual Improvement Award

By Lori Meggs

How do you improve on a good thing? Just ask the team in the Marshall Center's Instrument and Payload Systems Department. The Electrical, Electronic, Electromechanical Design and Fabrication Division team has been working to improve its processes and capabilities, seeking a renewed environment and focusing on aligning itself with NASA's goals and mission in a full-cost environment.

The efforts have paid off. The team recently won NASA's Continual Improvement Award, placing first among all of the entries submitted by eight NASA centers.

The department worked closely with Marshall TV to create a video highlighting many of their continual improvement ideas. A board of NASA Quality Management Associates, composed of representatives from each center, judged the competition. The board evaluated the entries from each center, reviewing the continuous improvement concepts and tools used and analyzing the results and timeliness. After the individual evaluations and scores were tallied, Marshall's entry was the clear winner.

"We are very proud of our award, but we're most excited about the improvements we have made," said Rusty Cowan, chief of the Mechanical Fabrication Branch of the Instrument and Payload Systems Department. "We have built on everyone's strengths, and people are excelling."

Following last year's Marshall realignment, the department established the Enhanced Manufacturing Continual Improvement

See Award on page 8

Marshall employees and their children to travel out of this world

Interactive exploration exhibit to visit the center April 26-27

By Bill Hubscher

Marshall Center team members and their children won't need to don space helmets or take on years of astronaut training, but they'll still get to travel among the stars next week.

NASA's Vision for Space Exploration Experience — an interactive traveling exhibit allowing visitors to virtually tour our nearest neighbors in the solar system — is coming to the Marshall Center on Wednesday, April 26, and Thursday, April 27. The Thursday tours will coincide with Marshall's annual Take Your Children to Work Day.

The Experience, which is wheelchair accessible, uses holographic and 3D imagery to show "explorers" what it might be like to visit the surfaces of the moon, Mars and destinations beyond. Visitors can manipulate their environment to explore lunar and Martian landscapes as well as travel to one of Saturn's moons. The exhibit, located on the north side of Building 4203, will be open for tours from 9 a.m.-2 p.m. both days.

On the second day of the visit, children of employees can tour the exhibit as part of Take Your Children to Work Day activities at Marshall. The day's events — with the theme of "Shaping the Future" — are designed for children in the third through 12th grades.

"Take Our Children to Work Day reminds us there is a new generation at work, one in which both girls and boys expect to fully participate in their workplaces and families," said Chanel Leslie of Marshall's Office of Diversity and Equal Opportunity and chairperson of Take Our Children to Work Day. "The activities are designed to expose students to what adults do during the work day and show them the value of an education. It is intended to be more than just a career day."

Activities include bus tours of the Marshall Center, a scavenger hunt in the quad area of the 4200 complex and exciting workshops about the International Space Station and the space shuttle, which follow a space shuttle mission and show what it takes to get to orbit.

In another workshop, the young visitors will hear from veteran astronaut Dr. Jan Davis — former director of the Marshall Safety and Mission Assurance Directorate — about how to be safer on Earth and how astronauts stay safe in space. Representatives from the Sci-Quest science museum in Huntsville will be at Marshall for a tongue-in-cheek presentation called "Grossology 101" on the functions of the human body. Students may also tour the Vision for Space Exploration Experience. The day caps off with a special screening of the Walt Disney film "Chicken Little" in Morris Auditorium.

School systems in the area have been notified and some will allow excused absences for students to attend the event. To register your kids for the Take Your Children to Work Day activities, to find out which school systems will allow excused absences, and for more information, visit: http://eo.msfc.nasa.gov . Registration deadline for the day's events is April 21.

The writer, an ASRI employee, supports the Office of Strategic Analysis and Communications.

Cathy Fletcher selected as Marshall's NASA Shared Services Center liaison

Emmett Given/MSFC

Cathy Fletcher, Marshall Center's NASA Shared Services liaison

Cathy A. Fletcher has been appointed the Marshall Center liaison for the NASA Shared Services Center, which opened March 1 at Stennis Space Center in Mississippi.

The mission of the Shared Services Center is to provide timely, accurate, high-quality, cost-effective and customer-focused support for selected NASA business and technical services. The center liaison acts as a point of contact between the Shared Services Center and Marshall, assists with local issues, provides current information regarding activities and assists with understanding the availability of services.

Most recently with the Office of the Chief Financial Officer, Fletcher was the lead resources analyst, overseeing a centerwide contract that provided administrative services to each Marshall directorate. She also served as the integration liaison supporting Marshall's Integrated Enterprise Management Program and eGov Center Implementation Team.

Fletcher began her career at Marshall in 1988 as a co-op from J.F. Drake Technical College in Huntsville with an associate degree in applied technology. She has supported diverse directorates throughout the center. Past assignments have included administrative, resource and outreach projects and programs within the Science and Mission Systems Office, Office of Strategic Analysis and Communications, Safety and Mission Assurance Directorate, Shuttle Propulsion Office and Office of Human Capital.

Fletcher earned a bachelor's degree in organizational management from Oakwood College in Huntsville in 1999.

For more information about the NASA Shared Services Center, visit www.nssc.nasa.gov .

A river runs through it

Central Americans tap imaging and mapping capability at NSSTC

By Sherrie Super

To help revitalize a river in their native country, three researchers from El Salvador recently tapped a space-based imaging and mapping capability at Marshall's National Space Science and Technology Center.

The researchers spent a week receiving hands-on training to operate a regional environmental visualization and monitoring system that brings satellite imagery to researchers on Earth.

Known by its Spanish acronym SERVIR, which stands for the Regional Monitoring and Visualization System for Mesoamerica, the unique monitoring system was designed by NASA and the University of Alabama in Huntsville to help Central American and southern Mexican authorities and scientists identify sudden changes in environmental conditions. The technology provides regional governments, scientists and stakeholders with real-time imagery detailing events ranging from tropical storms to forest fires.

"Satellite imagery doesn't stop at borders," said Dan Irwin, the research scientist who co-developed SERVIR at the NSSTC with principal investigator Tom Sever. "SERVIR users can cross boundaries and obtain a birds-eye view of the region to better manage natural resources."

For the three researchers from El Salvador, the focus was the land, or watershed, surrounding the Rio Lempa. The 200-mile-long river originates in Guatemala and flows through Honduras into El Salvador, before emptying into the Pacific Ocean. Along the way, it irrigates the lush Lempa valley, largely within El Salvador. In addition to supporting the country's agricultural population, the river provides the majority of El Salvador's drinking water and generates a sizeable portion of the country's energy.

Julio Funes, one of the visiting researchers at the NSSTC, represents a nonprofit foundation, known by its Spanish acronym "FUNDEMAS," that promotes social responsibility in El Salvador. To raise funds and awareness for river revitalization, his organization is creating a coffee table book with images showcasing the Rio Lempa watershed. To complement the book, the organization is creating a CD-ROM that will enable users to simulate the process of flying above the land to learn about the watershed.

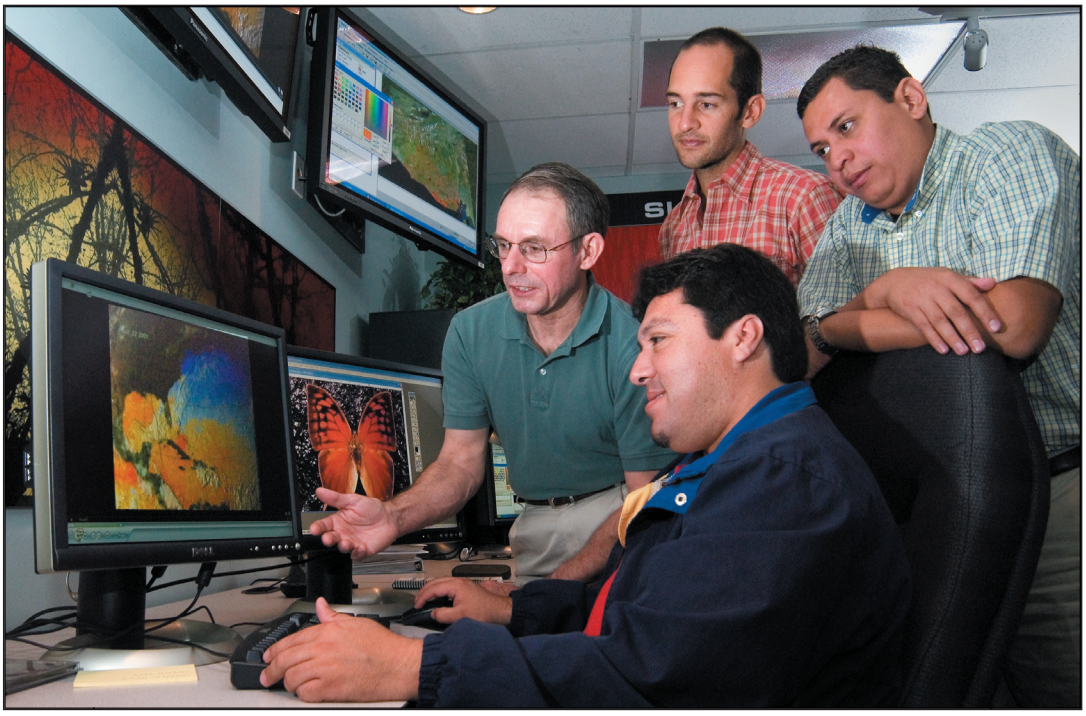
> *"Satellite imagery doesn't stop at borders. SERVIR users can cross boundaries and obtain a birds-eye view of the region to better manage natural resources."*
>
> *— Dan Irwin, NSSTC research scientist*

"The project will support social and environmental programs," Funes said. "The profits will directly help the watershed. It's the life of the region, with its rainforests and wildlife that will ultimately benefit. We want to make people aware of its importance and help influence decision-makers to do something sustainable to support the area."

While at the NSSTC, Funes, with his two colleagues from the El Salvador Environmental Ministry, received training in high-end visualization software packages — a cornerstone of the SERVIR monitoring capabilities. The CD created through their efforts will feature ground data, video clips and images gleaned by the SERVIR system.

The researchers said that they hope the project will help sustain the river by combating problems of reduced water quantity, increased contamination and rising temperatures.

The writer, an ASRI employee, supports the Office of Strategic Analysis and Communications.



Emmett Given/MSFC

Danny Hardin, left, an NSSTC senior research scientist from the University of Alabama in Huntsville, trains three researchers from El Salvador to use SERVIR, an NSSTC-developed environmental monitoring system. The researchers, from top clockwise, are Julio Funes of FUNDEMAS, and Mario Chacon and Wilfredo Fuentes of the El Salvador Environmental Ministry.

NASA education program named a top government innovation

From a NASA HQ news release

The partnership NASA created with thousands of students in dozens of schools across the country with the NASA Explorer Schools Program has gained national recognition.

The Ash Institute for Democratic Governance and Innovation named the program one of the Top 50 Government Innovations for 2006.

The selected programs represent the government's best efforts in various areas including education and training. They demonstrate the most innovative, creative and results-oriented efforts in government, according to the award criteria.

"NASA's Explorer Schools Program exemplifies the agency's tradition of investing in the nation's education programs and supporting educators who play a key role in preparing, inspiring, encouraging and nurturing young minds," said Angela Phillips Diaz, NASA's acting assistant administrator for education.

The Marshall Center supports the program through the Academic Affairs Office, which coordinates visits by Marshall officials and NASA astronauts to the Explorer Schools in a six-state area.

Representatives from the Marshall Center Academic Affairs Office visited Jones Cove Elementary School in Cosby, Tenn., April 3-4 to kick off the school's participation in the Explorer Schools Program. Veteran NASA astronaut Dr. Roger Crouch spoke to students there at a special assembly. The school was chosen as an Explorer School in 2005 after applying to the program through NASA's Office of Education.

In its fourth year, NASA's Explorer Schools Program establishes a three-year partnership between the agency and school teams of teachers and education administrators from diverse communities across the country. The program is designed for education communities to help improve teaching and learning in science, math and technology. The program's goal is to attract and retain students, teachers and faculty through a progression of educational opportunities.

Emmett Given/MSFC

Tammy Waters, center, principal of Jones Cove Elementary School in Cosby, Tenn., receives a model of a space shuttle from Vanessa Suggs, manager of the Elementary and Secondary Programs at the Marshall Center as Wil Robertson with NASA's Aerospace Education Services Program looks on.

The Harvard University John F. Kennedy School of Government in Cambridge, Mass., announced the selections March 22. The National Selection Committee on Innovation in American Government will name the most innovative agencies, from among the top 50, in July during a ceremony in Washington.

For information about the program on the Web, visit http://www.excelgov.org/ .

For information about the NASA Explorer Schools Program on the Web, visit http://www.nasa.gov/education .

NASA prepares for space exploration in undersea lab

NASA

From left, astronauts Ron Garan and Dave Williams, University of Cincinnati physician Tim Broderick and astronaut Nicole Stott prepare for their April 3-20 stay inside the Aquarius Underwater Laboratory.

From a NASA HQ news release

Three NASA astronauts and a Cincinnati doctor are living and working under the ocean this month to test space medicine concepts and moon-walking techniques.

Canadian astronaut Dave Williams is leading the 18-day undersea mission, which began April 3 and is to end April 20 aboard the National Oceanic and Atmospheric Administration Aquarius Underwater Laboratory off the Florida coast. NASA astronauts Nicole Stott and Ron Garan, and Dr. Tim Broderick of the University of Cincinnati round out the crew. Jim Buckley and Ross Hein of the University of North Carolina at Wilmington are providing engineering support.

During the mission, called the NASA Extreme Environment Mission Operations project, remote health care procedures are being tested on a patient simulator. New long-distance medical care procedures, such as telemonitoring and telerobotic surgery, may help maintain the health of spacefarers. The techniques simulated in Aquarius may one day be used to respond to emergencies on the International Space Station, the moon or Mars.

Deputy procurement director Byron Butler appointed to Senior Executive Service

By Rita Roberts

Byron W. Butler, Marshall Center deputy director for the Office of Procurement, has been appointed to the Senior Executive Service — the personnel system that covers most of the top managerial, supervisory and policy positions in the executive branch of the federal government.

Byron Butler

Since 1997, Butler has had a key role in all stages of the Marshall Center's contracting process, including bid-solicitation, evaluation, negotiations, awards and contract management. Managing a team of more than 150 civil service and contract employees, he currently supervises more than 900 active contracts, grants and cooperative agreements, valued at more than $31 billion.

From April 2004 to May 2005, Butler served in a temporary assignment at NASA Headquarters in Washington as project manager of the Contract Management Module Project in NASA's Integrated Financial Management Program. In that position, he helped lead efforts to select, configure, integrate and implement software to enhance contract administration and reporting.

From 1994 to 1997, Butler served as contracting officer and chief of the Research and Development Support Division in Marshall's Office of Procurement, the organization managing contracts for Marshall's Engineering Directorate. In 1989, he was appointed contracting officer and division chief for the Space Projects Division at the Marshall Center.

Butler served as contracting officer and branch chief of the Special Projects Branch in the Space Projects Division of the Marshall procurement office from 1984 to 1989. He began his NASA career in 1979 at the Marshall Center as a contract specialist.

A native of Anderson, Ala., Butler has received numerous special service and group achievement awards. In 2002, he was a recipient of the NASA Exceptional Service Medal. He has served as an essential advisor to major contract selection boards at the Marshall Center.

Butler earned a bachelor's degree in economics from the University of North Alabama in Florence in 1978 and master's in business administration from the Florida Institute of Technology in Huntsville in 1984.

Butler and his wife, Lydia, reside in Madison, Ala., and have four children and two grandchildren.

The writer, an ASRI employee, supports the Office of Strategic Analysis and Communications.

Site developed, maintained at Marshall

NASA's new Kids' Club Web site is entertaining and educational

From a NASA HQ news release

NASA's new Kids' Club Web site features animated, colorful, entertaining and educational activities for children in kindergarten through fourth grade.

Interactive games on the site teach children about exploring space, building and launching rockets, keeping airplanes on schedule and how a comet travels through the solar system. The site is located on the Web at: www.nasa.gov/kidsclub .

The site serves a dual purpose. Children can play games at home for entertainment, and educators can use it as a fun way to reach students in the classroom, the library, during after-school programs or anywhere children and computers are together.

"Our goal with the Kids' Club is to provide a medium that encourages children's interest in exploring the subjects important to developing early skills in science, technology, engineering and mathematics," said Angela Phillips Diaz, NASA's acting assistant administrator for education. "The Kids' Club combines entertainment with NASA's unique mission content and educational resources."

NASA's Educational Technology Services team at the Marshall Center developed and maintains Kids' Club. The site was designed in accordance with the 2004 National Education Technology Plan, "Toward a New Golden Age in American Education." Through the interactive site, content is aligned with educational standards that are customized to student's individual needs and interests.

"We've developed games, engaging multimedia visuals and educational activities at five different skill levels on the site," said Jeff Ehmen, education programs specialist at the Marshall Center. "We want students to explore and learn more about science, technology, engineering and mathematics. These materials support various national education standards in these subjects at each skill level."

The Kids' Club Web site was designed for easy student accessibility. The site is compatible with screen readers and other assistive technology, allowing use by disabled students. In addition to Flash-based games, the site features versions of content accessible in locations with slower Internet connections and computer equipment.

NASA's education programs motivate and engage students to pursue careers in science, technology, engineering and mathematics by supporting activities in the nation's schools, and distributing information through instructional and outreach products.

For information about NASA education programs on the Web, visit www.nasa.gov/education .

MARS Running Club preparing for Cotton Row Run competition

David Higginbotham/MSFC

From left, MARS Running Club President Sam Ortega, Engineering Directorate Director Mike Rudolphi and Marshall Center Director David King discuss training techniques in preparation for this year's Cotton Row Run. The race is held annually on Memorial Day, this year on May 29. The MARS Running Club is coordinating formation of Marshall teams to compete in the Cotton Row Run Corporate Cup team competition. Contact Ryan Decker at 544-3068 or Ortega at 544-9294 by May 8 for team information.

LOX

Continued from page 1

coming years.

The successful test comes three years into a collaboration by the Marshall Center, the U.S. Air Force Research Laboratory at Kirtland Air Force Base, N.M., and KT Engineering Corporation in Huntsville.

"This type of engine is a strong candidate for use in a launch vehicle propulsion system that is low cost, but offers the high operational responsiveness needed to pursue our aggressive space exploration goals," said Robert L. Sackheim, former special assistant to the director at the Marshall Center and now retired. "As we move forward, the technology offers the opportunity to fly more and learn more."

"As a result of these tests, NASA engineers have learned a great deal about different configurations for LOX-methane propulsion systems," said David Stephenson, project manager for the Radial Segmented Launch Vehicle at the Marshall Center. The benefits of LOX-methane engines, Stephenson said, stem from their strong performance in supporting missions with heavy payloads. "Compared to engines powered by traditional storable hypergolic liquid fuels, LOX-methane engines have additional capabilities in supporting a large spacecraft's descent and landing on a planetary surface."

The collaboration's focus has been the development and testing of a pressure-fed type of LOX-methane engine — meaning the engine has pressurized propellant tanks with a separate gas supply to force fuel into the combustion chamber. Using this configuration, engineers developed engine start and shutdown sequences and evaluated LOX-methane engine performance over a range of fuel-mixture ratios and chamber pressures. Producing a vacuum-rated thrust of 20,000 pounds, the engine is integrated into a propulsion system test bed at the Marshall Center, a propulsion-research leader with world-class development and testing facilities.

The tests tapped the developmental engineering and integration capabilities of Marshall's test laboratory. "We have increased the existing technical expertise and experience working with LOX-methane propulsion systems," said Pete Rodriguez, director of the test laboratory managed by Marshall's Engineering Directorate. "We also have an exceptional testing infrastructure that has enabled us to accomplish this long-duration test. I am proud of the accomplishment of this government-contractor team."

Testing to date has demonstrated stable combustion over a range of propellant mixture ratios, engine throttle capability between 60 percent and 100 percent of rated thrust, and engine efficiencies consistent with the performance needs of future exploration missions.

Three additional hot fire tests are planned using this current engine configuration. Engineers then will replace the engine with a more flight-like test article incorporating a range of new design, material and manufacturing technologies. These technologies offer the promise of further increasing the performance and lowering the manufacturing cost of flight-rated engines.

The flight-like test article engine will undergo a similar series of cold flow and hot-fire tests to validate performance and provide critical engineering data required to develop the flight design. This work is being performed under a Small Business Innovation Research agreement between KT Engineering and the Air Force Research Laboratory with sponsorship from NASA and the Missile Defense Agency, a Department of Defense organization.

The writer, an ASRI employee, supports the Office of Strategic Analysis and Communications.

Classified Ads

To submit a classified ad to the Marshall Star, go to Inside Marshall, to "Employee Resources," and click on "Employee Ads — Submit Ad." Ads are limited to 15 words, including contact numbers. No sales pitches. Deadline for the next issue is 4:30 p.m. Thursday.

Miscellaneous

Lawn Boy 21" mower, 6.25HP, easy-stride self-propelled, 3-in-1 bag or mulch, $125. 864-8183

Two side-by-side eye-level crypts in Valhalla Memory Gardens, includes all fees, $5,200. 860-558-3036

Pool table, 8', 1" slate, Kasson, wood ball feet, all accessories, $3,000. 694-7399

"Howdy Honey Howdy" hardback, copyright 1905, poems by Paul Laurence Dunbar, $150. 430-1054 after 4 p.m.

Solid wood/veneer sewing machine cabinet w/foldout top, 20"x24", $95. 726-1381

Antique oak dresser w/ 2 large and 2 small drawers, framed beveled mirror attached, $295. 353-0370

1998 color Nintendo Game Boy, $15; Go-cart, 20 years old, needs work, 2-seater, $20. 885-2293

Hibiscus, three Lord Baltimore cherry red; two pinks, large roots, in 2-gallon pots, $7 each. 256-461-8369

White metal full futon/twin bunkbed w/ extra thick mattress, $100; 24' fiberglass heavy-duty ladder, $139. 772-1870

Baby jogger, 20", fold/collapses, with accessories, used little, $150. 653-0800

Six plots, side-by-side, Crestview Cemetery, Guntersville, Ala., make offer. 256-728-4942

Medela Pump-In-Style, $40; The Firm Workout System, $45. 837-3562

New Sigma Acoustic guitar by Martin, $200; Whirlpool heavy-duty washer and dryer, $200. 722-9989

Wedding dress/veil, ivory, size 8, $100; computer desk, $100. 776-9165

Traditional oak dining set, table w/ 6 chairs/leaf, $250; glider rocker, $50. 881-5093

Motegi wheels, 17x7, gunmetal w/polished tip, fits Accord, $300. 851-8085

Craftsman drill press, used little, $85; Voyager electric trailer brake control, unused, $45. 837-6776

German Shepherd pups, AKC, champion bloodline, black & tan, first shots/wormed, $500. 256-828-3373

iPod Remote Interactive Dock DS A1, connects to Onkyo audio components, new in package, $75. 828-1234

Craftsman lawn tractor, 15.5HP, 42" deck, 6 speed, garage kept, $895. 864-8183

Purebred Australian Shepherd, female, 1st shots, wormed, red tri, 3 months old, $50. 256-561-2287

New Canon printer, $30; memory stick, 1 GB, $59, Dell computer w/new 19" LCD screen, $760. 655-1986

Lily Flagg pool membership with dues paid for 2006, $1,000. 880-8427

Roper refrigerator w/ ice maker, 17 cu. ft., $300; Kenmore microwave stainless steel, $70. 256-679-7846 after 5p.m.

Ruger "old Army" stainless cap and ball revolver, $290. 851-8085

Red metal bunk beds/mattresses, $150. 961-0427

Monkey grass, variegated leaves, $8 per clump. 256-828-3373

Oak computer desk/hutch, $395; oak bookcases; large dark solid wood curio cabinet, $435. 881-5093

Worth Copperhead (-13) youth baseball bat, 31", 18 oz., still plastic wrapped, $45. 828-1234

Two Busch NASCAR series race tickets for 4/29, $45 each. 883-6496 or 683-7015

Austrailian Sheepskin UGG boots, new, lady's size 10 & lady's size 12, $45 each. 880-7490

Aluminum V-bottom boat with extras, 14', $700. 256-828-5246

Trampoline, 14' diameter, $100. 830-2806

Micron CRT monitor, 17", $10. 721-0617

Two La-Z-Boy recliner/rockers with swivel, burgundy; Troy-Bilt pony tiller, 5HP. 883-8186

2003 Epiphone Casino electric guitar w/hardshell case, $570. 746-9080

Queen size Lady Englander, Englander brand mattress, $50. 508-4379

Simplicity Broadmoor riding lawn tractor, 45 hours, hydrostatic, cruise control, 42" cut, professional grade, $2,000. 714-8580

New Dell-Dual Core computer w/19" LCD monitor, 1GB RAM, 128MB video, CD-RW/DVD, warranty, $760. 655-1986

Maytag dishwasher, 2 months old, $150. 348-8640

Pit Bull puppy, female, 4 months old, shots, $125. 990-1626

Chandelier, gold with 12 lights, $200; dining room set, oak, 6 chairs, leaf, $250. 881-2131

Baby jogger, 16" wheels, $170; child bike trailer, used twice, foldable, $65. 880-6152

McLane gas-powered yard edger, can deliver, $50. 527-8116

Fender Blues Jr. guitar amplifier, 1/12, 15 watts, reverb, $250. 423-4217

Valhalla Masonic Garden family plot; 4 plots, Lot 97, Block C, Section 3, Units 1-4, $7,200. 256-881-9421

Nintendo gamecube w/2 controllers, one wireless, $60; various games, $15 each. 881-3527

Solid beige Papasan chair and stool, $25. 772-7478

Oak entertainment center, holds up to 36" TV, matching side pier, modern, $800. 829-0285

La-Z-Boy electric lift recliner chair, $300; Amana 3-ton gas pack, $60; start booster, $18. 852-6952

Mark V Shopsmith, older model, brown base, books, band saw and other accessories, $395. 880-6146

Bachmann G-scale "Big Hauler" remote-control train set, complete w/box, only made in 1989, $100. 303-3702

Vehicles

1999 Ford Explorer, 4x4,4 door, Goodyear tires, towing package, privacy package, 82K miles, $7,150. 353-3229

1997 Mercury Sable LS, 103K miles, red/gray, all power, ABS, cruise, keyless entry, 3L/V6, $2,500. 881-0551

1990 Jeep Cherokee, 4 door, auto, CD, 74K miles, $1,200. 205-454-6390

1987 Ford Ranger pickup, bedliner, automatic, reddish/orange, $1,200. 520-2802/Ron

2000 Kawasaki KLR dual sport motorcycle, 6K miles, new tires, serviced recently, green, $2,500. 256-508-0164

1995 Nissan XE standard pickup, green, 168K miles, 5-speed manual, air, am/fm cassette, bedliner, $3,200. 859-3029

2005 Seadoo RXT PWC, 68 hrs., green/black, dealer maintained, warranty, $9,500. 256-497-3518

2002 Shamrock lightweight expandable travel trailer, 23', slide, sleeps 6-8, loaded, anti-sway hitch, $10,900. 874-7874

2004 Chevy Silverado LS, sport side, factory tint, 28.5K miles, under warranty, $15,995. 864-2629

Boat, 17' Silverline, 115 Mercury, live wells, trolling motor, depth finder, many extras, $1,550. 426-0223

1997 GMC truck, extended cab, painted tool box, Vortek V6, 5 speed, $4,300. 651-4748

2002 Dodge Ram 1500 SLT pickup, 4x4, silver, 102K miles, $12,800. 256-891-1073

1995 Eagle Vision TSI, 4 door, red, auto, air, PS/PW, leather, CD, $2,500. 881-9643

1979 Honda Z50 mini bike, good shape, collectible, $525. 325-6000

1994 Lexus LX 400, pearl white, new tires, $7,300. 533-7234

1996 Viking pop-up camper, 23.5' w/cover, air conditioned, furnace, awning, extra accessories, clean, $2,850. 722-8116

1974 Mercedes 450SL roadster, 4.5L/V8, automatic, 2 door, power, hard/soft tops, yellow, $14,900. 883-4177

2000 Toyota Tacoma PreRunner, silver, V6, 4 door, double cab, 85K miles, original owner, $16,000. 464-9648

1999 Yamaha Warrior 4 wheeler, 6 speed w/reverse, 80 hours riding time, $2,800. 694-0501

1975 Honda CB 500T motorcycle, $1,495. 883-1667 evenings

1985 Bayliner 215 Capri, 230HP, depth finder, kept dry, $4,700. 881-8376

1998 Jeep Wrangler, 89K miles, new tires/rims, air conditioner, 5 speed, $8,000. 837-0541

2004 Chrysler Sebring convertible, gold, 5K miles left on factory warranty, records, $15,500. 652-5177

1997 Ford Crown Victoria LX, 4.6L, auto, a/c, pw/pdl, remote, cruise, l41K miles, $3,000. 527-9204

2000 Nissan Frontier Crew Cab, 4 door, automatic, silver, power, remote, CD/cassette, 102K miles, $9,500. 880-9025

1998 Chevrolet Cavalier, 4 door, 4 cylinder, 2.4 liter, power windows, a/c, automatic, compact disc/radio, $1,950. 603-3558

2000 Chevy Z71, extended cab, third door, bedliner, tool box, 150K miles, $12,500. 755-1327

2004 Chevy Trailblazer, dark gray, 44K miles, auto, 2WD, pw/pd, cruise, $15,000. 337-5939

2000 Honda Accord, 2 door, 57K miles, auto, CD, tint, $9,999. 256-655-6293

2004 Ford Explorer XLT, 4WD, 31K miles, fully loaded, leather, sunroof, Michelin tires, $19,500. 797-1730

1996 Ford Taurus, $1,500. 468-4104/Mike

2000 Buick LeSabre Limited, one owner, garaged, $8,500. 883-2948

2004 Nissan Altima 2.5S, white, 48K miles, $16,000. 256-347-4808

1999 Chevy Suburban LT, leather, video system, towing, CD, rear air, $9,000. 256-858-5552

2002 Honda Sabre, black, 1100cc, 3K miles, Corbin seat, 3/4 windshield, gargage kept, $5,500. 256-679-1288

Murray Go-Cart, 6HP, seats 2, $550. 772-2332

2001 Toyota Tacoma Xtra-cab, pre-runner, red, V6/AT, SR5 trim, 74K miles, bedliner, toolbox, $15,500. 256-693-9016

2003 Mitsubishi Lacer, 45K miles, auto, CD, a/c, power windows, remote start, warranty, $9,000. 489-3120

1998 VW Cabrio convertible, white w/black top, 4 cyl., 5 speed, 83K miles, leather, garage kept, $7,500. 837-3614

2003 Ford Explorer XLT, 17.5K miles, $17,900. 895-9137

Wanted

Wooden jungle gym for church playground. 852-9995/Toki

Bagger for John Deere riding mower, gas-powered scooter, running or not. 527-8116

Cargo trailer, 6'x10', enclosed, other sizes considered. 604-8257

Training water skis & youth ski vests, good condition, youth large, X-large or adult small. 651-3315

Old banjo in any condition, prefer 5 string. 509-7993/Ron

NEC advanced personal computer. 881-6595

Newborn and infant clothes. 256-656-2965

Players, 55 & over, for Huntsville Senior slow-pitch softball league. 859-7419/Ray or 883-1135/Fred

Metal utility trailer w/ramps for hauling riding lawn mower. 722-9989

Used color TV, less than 22.75" high. 256-650-5427

Found

Television, two watches, glove, pair of sunglasses. Call Protective Services Department, 544-3623 to claim/identify

Free

Murray riding mower, doesn't run. 325-3449

Lab mix puppy, 4 months, black w/ white markings, shots up-to-date. 961-7804

Adult domestic short hair indoor cat to good home, fixed, has current shots. 256-337-1288

Award

Continued from page 1

Team to better align Marshall's manufacturing organization with the Vision for Space Exploration, a plan to return to the moon and destinations beyond.

As part of a major reorganization, the design and fabrication division — which builds flight and non-flight hardware — was integrated into a large, in-house design organization within the Engineering Directorate. This realignment was implemented to facilitate communication between design and manufacturing. Accountability and ownership of the final product also was improved with the change.

NASA

From left, Mark Beutjer, Holly Walker and Bruce McCoy of Marshall's Instrument and Payloads Systems Department represent a cross section of electrical and mechanical teams that were combined in the department's continual improvement efforts. In the background, the 5-axis machining of hardware for ice frost ramps is used to support external tank foam testing at the Fabrication Services Facility in Building 4705.

NASA Administrator Mike Griffin, left, and Marshall Center Director David King, right, present NASA's Continual Improvement Award to Jerry Wright and Nadra Hatchett of Marshall's manufacturing organization at the recent NASA-Industry Conference on Excellence in Washington. The annual conference provides a forum for NASA and its contractor partners to exchange ideas, success stories and lessons learned.

The team focused on listening and collecting ideas from both its customers and workforce. "We listened to employees and took their ideas and made it happen," added Cowan.

Five categories were identified for improvement: business, quality, processes, facilities and people. The leaders of these five teams used numerous continual improvement tools, including brainstorming, mind mapping, process mapping and benchmarking, to develop solutions and make improvements.

"We found the best ideas came from the people actually doing the work on the manufacturing shop floor," said Jeff Brown, chief of the Parts, Packaging and Fabrication Branch of the Instrument and Payload Systems Department. "We're working on the small incremental changes everyday, and that is making us successful." Changes such as streamlining the purchase-order and customer-supplied parts processes have reduced data input time resulting in a substantial cost savings.

The team quickly became aware of the importance of communication in improving the process. Managers were encouraged to take a more hands-on and face-to-face approach with problem solving and communication. Employees in the division are now enjoying the benefits of their improvements. As with any continuous improvement effort, new ideas are already being discussed and planned for the future.

The writer, an ASRI employee, supports the Office of Strategic Analysis and Communications.

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